

The diameter of the eye equals hardly half its distance from the mouth; frontal much longer than broad, once and a half as broad as the supraocular; ventrals 208 . . . . .

*H. elapoides*  
(Florida).

EXPLANATION OF PLATE II.

- Fig. 1. *Hoplocephalus melanurus*, Blgr.  
2.       "       *woodfordii*, Blgr.  
3.       "       *elapoides*, Blgr.

4. List of the Reptiles, Batrachians, and Freshwater Fishes collected by Professor Moesch and Mr. Iversen in the district of Deli, Sumatra. By G. A. BOULENGER, F.Z.S.

[Received December 30, 1889.]

A few weeks ago I was requested by Dr. Günther to name a collection of Reptiles, Batrachians, and Freshwater Fishes from Deli and Langkat, North-east Sumatra, transmitted to him for examination by the collector, Professor Moesch, of Zurich. As the collection contains, in addition to two novelties, representatives of a considerable number of species new to Sumatra, although previously known from the Malay Peninsula or from the neighbouring islands, I thought a full list would be of zoogeographical interest and offered it to this Society for publication. On hearing of this Professor Collett, of Christiania, very kindly proposed to submit to me for examination a large collection brought together during a stay of 20 months precisely in the same localities by a preparator of his Museum, Mr. Iversen, which had reached him almost on the very day he read the announcement of my paper. I gladly availed myself of Prof. Collett's offer, and postponed the reading of my paper so as to be able to incorporate in it the results of the examination of the Iversen collection. In addition to a good number of species not in the Moesch collection, the latter contains a new frog of the genus *Rhacophorus*. In the following list I have marked M. the species represented in Prof. Moesch's collection, I. those in Mr. Iversen's. Small species are better represented in the former collection and large ones in the latter, so that the two together should give a very fair idea of the herpetological and ichthyological faunas of this part of Sumatra. I was much interested to find in Prof. Moesch's collection examples of three of the new Batrachians which I described not long ago from the hills near the town of Malacca, thus showing once more how extremely alike the forest faunas of the opposite coasts of the Straits of Malacca are. A fact worthy of record is that many of the Batrachians in this collection, however widely remote their affinities, are spotted or ornamented with bright carmine, a colour which is by no means frequent in Batrachians. Thus out of the

12 species obtained by Prof. Moesch, carmine spots or markings are present in the following:—*Rana limnocharis*, *Microhyla achatina*, *Phrynella pulchra*, *Bufo melanostictus*, *B. parvus*, *B. asper*. A somewhat similar proportion of carmine-spotted forms was observable in the collection from Malacca presented by Mr. Hervey. Such ornamental markings cannot be regarded as adaptations to the surroundings, and doubtless fall under the head of geographical isomorphism or mimetic analogy.

As noticed by Wallace, the fauna of Sumatra is much more nearly allied to that of the forests of the Malay Peninsula and Borneo, than is that of Java to either Sumatra or Borneo. Dr. Jentink<sup>1</sup> finds "that the Mammalian fauna of East Sumatra agrees much more with the Borneo than with the West Sumatra fauna." I am not struck by any such relation in the herpetological fauna.

[P.S. (Feb. 7, 1890).—This list was in type when I received from my colleague, Dr. van Lidth de Jeude, an advanced copy of a paper "On a collection of Snakes from Deli," to be published by him in the 'Notes from the Leyden Museum,' xii. 1890, pp. 17–27, and which, very curiously, was completed on the very same day as my own (Leyden Museum, 30 Dec. 1889). There is, however, no duplication of names, from the fact that both the new forms described by Dr. de Jeude were not represented in the collection worked out by me; and I have no alteration to make to my list. Of the two novelties in Dr. de Jeude's paper, one, *Calamaria vermiformis*, var. *sumatrana*, is, however, not unknown to me, as I had found a specimen (also from Deli) in the Fischer Collection, and this I had likewise referred, as a colour-variety, to *C. vermiformis*. Should such a form warrant a name, that of *sumatrana* (Jeude) will have to be changed, being preoccupied by Edeling.

*Hypsirhina hageni*, Jeude, is unknown to me; but, judging from the careful description, appears to be a very interesting new form, intermediate between *Hypsirhina bocourti*, Jan (Siam), *H. sieboldii*, Schleg. (India, Burma, Malay Peninsula), and *Homalophis doriae*, Peters (Borneo). The snake described by Steindachner in 1887<sup>2</sup>, as a variety of the latter, is probably, again a distinct species, which agrees with *H. hageni* in the single loreal and 27 rows of scales.

Other species mentioned by Dr. de Jeude and not represented in the Moesch and Iversen collections are *Typhlops lineatus*, Reinw., *Lycodon aulicus*, L., *Odontomus subannulatus*, Schleg., *Coluber (Gonyosoma) oxycephalus*, Reinw., *Dryophis fasciolutus*, Fischer,

<sup>1</sup> Notes Leyden Mus. xi. 1889, p. 19.

<sup>2</sup> *Molge strauchii*, Steind., described and figured in the same paper, = *Neurergus crocatus*, Cope (1862). It appears to me probable that the affinities of *Molge crocata* are with *M. montana*, Savi, not with *M. cristata* and *marmorata*, as suggested by Steindachner. I cannot see how the presence of a ligamentous *arcus fronto-temporalis* can justify the inference that a dorsal crest is probably present in the breeding male. There are Newts with a ligamentous fronto-temporal arch, both with (*Molge marmorata*) and without (*M. montana*) a dorsal crest; the same is the case with those in which the arch is ossified (*Molge vittata*, *M. boscae*) and with those in which it is absent (*Molge cristata*, *Chioglossa lusitanica*).

*Platurus laticaudatus*, L. (*fischeri*, Jan), and *Trimeresurus gramineus*, Shaw. There is possibly identity between the author's *Coryphodon korros*, *Leptognathus laevis*, *Dipsas drapiezii*, *Bothrops erythrurus*, *B. hageni*, and my *Zaocys carinatus*, *Amblycephalus carinatus*, *Dipsas cynodon*, and *Trimeresurus formosus*.]

## REPTILIA.

## EMYDOSAURIA.

1. *CROCODILUS POROSUS*, Schn. I.

## CHELONIA.

2. *TRIONYX PHAYRII*, Theob. I.

The occurrence of this *Trionyx* in Sumatra is of very great interest. The skull, type of Gray's *T. jeudi*, supposed to be from Java (?), may be also from Sumatra. The halfgrown specimen from Deli agrees in every respect with the Burmese specimens in the British Museum.

3. *TRIONYX CARTILAGINEUS*, Bodd. I.

A young specimen from Langkat agrees in colour with Theobald's *T. ephippium*.

4. *GEOEMYDA SPINOSA*, Gray. I.

5. *CYCLEMYS AMBOINENSIS*, Daud. I.

## LACERTILIA.

6. *HEMIDACTYLUS FRENATUS*, D. & B. I.

7. *GEHYRA MUTILATA*, Wgm. I.

8. *DRACO VOLANS*, L. I.

9. *DRACO FIMBRIATUS*, Kuhl. I.

10. *CALOTES CRISTATELLUS*, Kuhl. M., I.

11. *GONYOCEPHALUS GRANDIS*, Gray. I.

12. *VARANUS DUMERILII*, Schleg. I.

13. *VARANUS SALVATOR*, Laur. I.

14. *MABUIA RUGIFERA*, Stol. M.

Two specimens, with 28 scales round the body, and five light dorsal lines. In the larger specimen, the præfrontals form a short suture with each other, and the frontal is in contact with the second supraocular only.

15. *MABUIA MULTIFASCIATA*, Kuhl. M., I.

16. *LYGOSOMA OLIVACEUM*, Gray. M., I.

17. *LYGOSOMA TEMMINCKII*, D. & B. M.

## OPHIDIA.

18. *PYTHON RETICULATUS*, Schn. I.  
 19. *CYLINDROPHIS RUFUS*, Laur. I.  
 20. *XENOPELTIS UNICOLOR*, Reinw. M., I.  
 21. *CALAMARIA SUMATRANA*, Edeling. M., I.

Three specimens of this little-known *Calamaria* were obtained, two by Prof. Moesch, one by Mr. Iversen. The following description is drawn up from these specimens:—

Rostral a little broader than deep; frontal longer than broad, a little shorter than the parietals, rather more than twice as broad as the supraocular; one præ- and one postocular; five upper labials, third and fourth entering the eye; two pairs of chin-shields in contact with each other, the anterior in contact with the mental. Scales in 13 rows. Ventrals 168, 176, 174; anal entire; subcaudals 13, 12, 12. Tail pointed. Reddish brown above, with five black longitudinal lines; each scale of the outer row with a white spot; a yellow collar on the nape, narrowly interrupted in the middle, and a similar marking at the base of the tail; lower parts uniform yellowish, with a black line along the middle of the tail.

Total length 265 millim.; tail 12.

This *Calamaria* resembles strikingly, at a first glance, the Javan *C. quadrimaculata*, from which it differs in having five instead of four upper labials, and in the separation of the first pair of lower labials by the anterior chin-shields. Specimens from Kiu Kiang and Hong Kong have recently been referred<sup>1</sup> to *C. quadrimaculata*, but, in spite of their similar coloration, belong to a distinct species, for which I propose the name of *C. septentrionalis*. *C. septentrionalis* differs from *C. quadrimaculata* in the frontal being as broad as long and in the tail being rounded at the end.

22. *PSEUDORHABDION LONGICEPS*, Cant. M.

23. *LYCODON SUBCINCTUS*, Boie. M., I.

I suspect *Elapoides annulatus*, Sauvage (1884), to be founded on a young specimen of this species.

24. *LYCODON EFFRENIS*, Cant. M.

25. *ABLABES BALIODIRUS*, Boie. M.

26. *ABLABES TRICOLOR*, Schleg. M.

27. *SIMOTES PURPURASCENS*, Schleg. M., I.

= *S. trinotatus*, D. B., *S. labuanensis*, Gthr., *S. catenifer*, Stol., *S. dennysi*, Blanf., *S. affinis*, Fisch.

Otherwise identical specimens, from the same locality, have either 19 or 21 rows of scales.

<sup>1</sup> Günther, Ann. & Mag. N. H. (6) i. 1888, p. 165.

28. *SIMOTES OCTOLINEATUS*, Schn. I.  
The variety with five yellow dorsal lines separated by broader black stripes.
29. *SIMOTES SIGNATUS*, Gthr. M.
30. *ZAOCYS CARINATUS*, Gthr. I.  
The largest specimen measures 10 feet ; tail 2 feet 5 inches.
31. *COLUBER MELANURUS*, Schleg. I.
32. *DENDROPHIS PICTUS*, Gm. I.
33. *DENDRELAPHIS CAUDOLINEATUS*, Gray. I.
34. *TROPIDONOTUS CHRYSARGUS*, Boie. M., I.
35. *TROPIDONOTUS TRIANGULIGERUS*, Boie. M., I.
36. *TROPIDONOTUS FLAVICEPS*, D. & B. M., I.
37. *TROPIDONOTUS RHODOMELAS*, Schleg. I.
38. *CHERSYDRUS GRANULATUS*, Schn. I.
39. *DIPSAS CYNODON*, Cuv. I.
40. *DIPSAS DENDROPHILA*, Reinw. I.
41. *PSAMMODYNASTES PULVERULENTUS*, Boie. M.
42. *PSAMMODYNASTES PICTUS*, Gthr. M., I.
43. *DRYOPHIS PRASINUS*, Boie. I.
44. *CHRYSOPELEA ORNATA*, Shaw. I.
45. *HOMALOPSIS BUCCATA*, L. I.
46. *CERBERUS RHYNCHOPS*, Schn. I.
47. *HYPsirrhina PLUMBEA*, Boie. I.
48. *ADENIOPHIS INTESTINALIS*, Laur. I.
49. *ADENIOPHIS BIVIRGATUS*, Boie. I.
50. *BUNGARUS FASCIATUS*, Schn. I.
51. *NAIA TRIPUDIANS*, Merr. I.

The numerous specimens collected by Mr. Iversen are brown or blackish, without spectacle-mark ; lower surface of neck white, followed by a black cross-band, and with an azygous black spot anteriorly and one or two on each side. 23 or 25 scales across the neck, 17 or 19 across the middle of the body. Ventrals 183-192; subcaudals 50-52 pairs.

This variety, which is closely allied to Cantor's var. *nigra*, connects the typical *N. tripudians* with Reinwardt's *N. sputatrix*.

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| 52. NAIA BUNGARUS, Schleg.                | I. |
| Up to 13 feet long.                       |    |
| 53. AMBLYCEPHALUS CARINATUS, Reinw.       | I. |
| 54. TRIMERESURUS FORMOSUS, Schleg.        | I. |
| 55. TRIMERESURUS WAGLERI, Schleg.         | I. |
| 56. TRIMERESURUS PURPUREOMACULATUS, Gray. | I. |

A single adult specimen, belonging to the var. *carinatus*, Gray. Uniform green above, the interstitial skin purplish brown; a series of whitish spots along the outer series of scales; lower parts uniform pale greenish. Scales in 27 rows; 15 scales in a transverse series between the supraoculars; ventrals 161; subcaudals 64.

#### BATRACHIA.

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|------------------------------------|--------|
| 1. RANA MACRODON, Kuhl.            | M., I. |
| 2. RANA TIGRINA, Daud.             | I.     |
| 3. RANA LIMNOCHARIS, Wgm.          | M.     |
| 4. RANA ERYTHRÆA, Schleg.          | I.     |
| 5. RANA NICOBARIENSIS, Stol.       | M.     |
| 6. RHACOPHORUS LEUCOMYSTAX, Gravh. | M.     |
| 7. RHACOPHORUS COLLETTI, sp. n.    | I.     |

Vomerine teeth in two oblique series commencing at the inner front edge of the choanæ, which are very large. Head as long as broad; skin of head free, smooth; snout triangular, a little longer than the diameter of the orbit; canthus rostralis angular; loreal region oblique, slightly concave; nostril near the tip of the snout; interorbital space a little broader than the upper eyelid; tympanum very distinct, three fourths the diameter of the eye. Fingers long, with a slight rudiment of web; toes nearly entirely webbed; disks of fingers about half the size of the tympanum, of toes smaller; subarticular tubercles moderate; a very small inner metatarsal tubercle. Hind limbs very long; the femoro-tibial articulation reaches the fore limb and the tibio-tarsal far beyond the tip of the snout; tibia two thirds the length of head and body. Skin smooth, granular on the belly and under the thighs. Grey above, loreal region and sides of body lighter; lips with a fine blackish edge; limbs with dark cross-bands; anal region blackish, with a white edge above; lower parts whitish.

From snout to vent 62 millim.

A single female specimen from Langkat.

This species is closely allied to *R. leucomystax*, but differs in the much longer hind limbs.

8. *MICROHYLA ACHATINA*, Boie. M.

9. *MICROHYLA INORNATA*, sp. n. M.

Snout obtuse, shorter than the diameter of the orbit; interorbital space a little broader than the upper eyelid. First finger much shorter than second; toes moderately elongate, quite free; tips of fingers and toes dilated into very small disks; subarticular tubercles very distinct; inner metatarsal tubercle very small, round; no outer tubercle. The tibio-tarsal articulation reaches the eye. Back covered with small smooth warts. Dark brown above, spotted or marbled with black; sides of head black, with a series of white spots along the upper lip; lower parts brown; throat of male black. Male with a subgular vocal sac.

From snout to vent 20 millim.

Three specimens, two males and one female.

10. *PHRYNELLA PULCHRA*, Blgr. M.

Two male specimens, agreeing with the types from Malacca. The specimen from the mountains of Perak, referred to this species by Günther (Ann. & Mag. N. H. (5) xx. 1887, p. 313, pl. xvi. fig. B), is a distinct species, which I will call *P. pollicaris* on account of the strong tubercle-like rudiment of pollex which is developed in the male of this species but not of *P. pulchra*. Other differences are found in the stouter habit, the shorter head, the presence of a strong transverse fold connecting the posterior borders of the eyelid, the shorter and thicker digits with much stronger subarticular tubercles, and the hardly half-webbed toes. The coloration is also a much plainer one.

11. *BUFO MELANOSTICTUS*, Schn. M., I.

12. *BUFO QUADRIPORCATUS*, Blgr. M.

13. *BUFO PARVUS*, Blgr. M., I.

14. *BUFO ASPER*, Gravenh. M., I.

15. *LEPTOBRACHIUM HASSELTII*, Tsch. I.

A larval specimen with well-developed limbs, obtained by Mr. Iversen, enables me to name several tadpoles of rather large size, from Larut, Perak, presented to the Museum in 1886 by Dr. J. Anderson. These are remarkable in being marked all over with numerous deep black dots. Spiraculum sinistral, equally distant from the end of the snout and from the tail; latter once and a half as long as the body. Length of body 25 millim.

16. *MEGALOPHRYS NASUTA*, Schleg. M.

## PISCES.

## ACANTHOPTERYGII.

1. *Gobius caninus*, C. & V. M., I.

D.  $6\frac{1}{9}$ . A.  $\frac{1}{9}$ . L. lat. 33-35.

Depth of body six times in the total length, length of head four times and one third; head once and three fourths as long as broad.

2. *Eleotris butis*, C. & V. I.  
 3. *Catopra grootii*, Blkr. M.  
 4. *Anabas scandens*, Dald. I.  
 5. *Helostoma temminckii*, K. & v. H. I.  
 6. *Ospromenus olfax*, Comm. M., I.  
 7. *Ospromenus trichopterus*, Pall. M., I.  
 8. *Ospromenus leerii*, Blkr. M., I.  
 9. *Betta pugnax*, Cant. I.  
 10. *Ophiocephalus gachua*, Ham. Buch. M., I.  
 11. *Ophiocephalus striatus*, Bloch. M., I.  
 12. *Ophiocephalus lucius*, K. & v. H. M.  
 13. *Ophiocephalus marulius*, Ham. Buch. M.  
 14. *Rhynchobdella aculeata*, Bl. M.  
 15. *Mastacembelus unicolor*, K. & v. H. M.  
 16. *Mastacembelus erythrotænia*, Blkr. M.  
 17. *Mastacembelus maculatus*, Reinw. M.  
 18. *Mastacembelus armatus*, Lacép. M.

## PHYSOSTOMI.

19. *Clarias magur*, Ham. Buch. M., I.  
 20. *Clarias nieuhofii*, C. & V. M.  
 21. *Cryptopterus mononema*, Blkr. M.  
 22. *Callichrous bimaculatus*, Blkr. I.  
 23. *Callichrous hypophthalmus*, Blkr. I.  
 24. *Macrones micracanthus*, Blkr. M., I.  
 25. *Macrones nigriceps*, C. & V. M.  
 26. *Macrones nemurus*, C. & V. M., I.



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| 27. <i>MACRONES PLANICEPS</i> , K. & v. H.     | M. |
| 28. <i>LIOCASSIS PÆCILOPTERUS</i> , K. & v. H. | M. |
| 29. <i>LIOCASSIS MICROPOGON</i> , Blkr.        | M. |
| 30. <i>LIOCASSIS STENOMUS</i> , K. & v. H.     | M. |
| 31. <i>LIOCASSIS MOESCHII</i> , sp. n.         | M. |

D. 1/7. A. 15. P. 1/8.

Upper surface of head naked and rugose; occipital process as long as broad; a separate shield, a little broader than long, between the occipital process and the basal shield of the dorsal spine; head longer than broad, a little broader than deep; snout not prominent. The depth of the body contained five times in the total length (without caudal), the length of the head thrice and two thirds. Barbels slender and short, the maxillary reaching the opercle. Dorsal spine serrated behind, its length two thirds that of the head. Adipose fin twice as long as dorsal, as long as its distance from the latter. Pectoral spine strong, considerably longer than the dorsal, strongly serrated on the inner edge. Brown above, fins blackish brown.

Total length 90 millim.

Three specimens.

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|--|--------|
| 32. <i>GLYPTOSTERNUM PLATYPOGON</i> , K. & v. H. | M.     |
| 33. <i>BELONE CANCILOIDES</i> , Blkr.            | M.     |
| 34. <i>HEMIRHAMPHUS BUFFONIS</i> , Blkr.         | I.     |
| 35. <i>DANGILA KUHLLII</i> , C. & V.             | M.     |
| 36. <i>OSTEOCHILUS WAANDERSII</i> , Blkr.        | M.     |
| 37. <i>CROSSOCHILUS OBLONGUS</i> , C. & V.       | M.     |
| 38. <i>BARBUS MACULATUS</i> , K. & v. H.         | M., I. |
| 39. <i>BARBUS LATERISTRIGA</i> , C. & V.         | M.     |
| 40. <i>BARBUS HAMPAL</i> , C. & V.               | M., I. |
| 41. <i>BARBUS SUMATRANUS</i> , Blkr.             | M.     |
| 42. <i>BARBUS APOGON</i> , Blkr.                 | I.     |
| 43. <i>RASBORA LATERISTRIATA</i> , Blkr.         | M., I. |
| 44. <i>RASBORA SUMATRANA</i> , Blkr.             | M., I. |
| 45. <i>CHELA ANOMALURUS</i> , v. Hass.           | M.     |
| 46. <i>ACANTHOPSIS CHÆRORHYNCHUS</i> , Blkr.     | M.     |
| 47. <i>LEPIDOCEPHALICHTHYS HASSELTII</i> , Blkr. | I.     |

48. NOTOPTERUS CHITALA, Ham. Buch. M.  
 49. MONOPTERUS JAVANENSIS, Lacép. M., I.  
 50. ANGUILLA SIDAT, Blkr. M.  
 51. MURÆNA TILE, Ham. Buch. M.

## LOPHOBRANCHII.

52. DORYICHTHYS CAUDATUS, Ptrs. M.

## PLECTOGNATHI.

53. TETRODON PALEMBANGENSIS, Blkr. M.  
 54. TETRODON LIURUS, Blkr. M.

5. A Contribution to our Knowledge of British Pleuronectidæ.  
 By Dr. A. GÜNTHER, F.R.S., V.P.Z.S.

[Received December 6, 1889.]

(Plate III.)

1. *On the Occurrence of Arnoglossus lophotes and Arnoglossus grohmanni in British Seas.*

In the fourth volume of the 'Catalogue of Fishes,' p. 417 (1862), I described from three skinned specimens which formed part of the Yarrell Collection a new species of *Arnoglossus* under the name of *A. lophotes*. I was unable to give the locality whence these specimens were obtained, but inferred from the mode of their preservation that it was more probable that they came from British seas than from the Mediterranean. I placed this new species close to *Arnoglossus grohmanni* from the Mediterranean, which is sufficiently well figured in Bonaparte's 'Fauna Italica,' and correctly described by Canestrini (Arch. Zool. i. p. 12, tav. i. fig. 3); and pointed out such differences between the two species that it seemed almost impossible to confound them.

The uncertainty about *A. lophotes* being a British species was, however, soon removed by Couch, who in his 'History of British Fishes' (1864) states that he had examined a specimen obtained at Plymouth, and by Professor Moseley, who in 1882 captured another example of the same species in the trawl off Lundy Island, which he deposited in the British Museum.

To the late Mr. F. Day neither the evidence brought forward by me nor that of Couch seemed satisfactory enough to introduce this fish into the British fauna (Fish. Great Brit. ii. p. 23), and it was only after Professor Moseley's capture that he admitted it, asserting, however, that it was identical with the Mediterranean *A. grohmanni* (Proc. Zool. Soc. 1882, p. 748, pl. 53).

The opportunity of again setting right this error is now offered